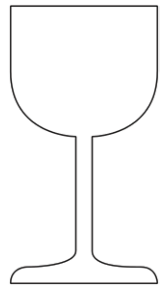




HOW TO...

Draw with bezier curves



Drawing precise curves and dead-straight lines is easier than you might think. Adam Banks shows you how to master the basics of the bezier pen

When you want to create artwork from scratch, rather than editing an existing image, the best tool is often a drawing program. This lets you create lines and shapes as vector objects that you can move around independently, resize or reshape at any time and scale to any size with no loss of smoothness.

Drawing packages offer various ways of producing shapes, including preset objects that you can just drag out to the required size. In *Shopper* February 2005 we showed how complex artwork could be built up using the QuickShapes in Serif DrawPlus. But the most flexible drawing tool of all is the bezier pen. This uses some very clever maths to let you create just about any shape imaginable. You draw by placing a series of points, known as nodes. Each node has two handles, normally shown attached to it by fine lines. The actual line you're drawing, called a path, passes through all the nodes, and what happens to it between nodes is dictated by the handles, which you can adjust as necessary.

In principle, it's easier to get professional results with bezier curves than with a real pen. You don't need a steady hand or an artist's eye as the curves you draw are always smooth. In practice, nobody finds bezier curves easy, because they work differently from anything in real life. It's worth persevering, though. Remember the basic rule: click and let go for a corner, click and drag for a curve.

To get you started, we'll show you how to draw a wine glass shape using bezier curves. We've used Serif DrawPlus 4, which you can download for free from www.freerisefoftware.com. The method is the same in any program with a bezier pen tool.

1 Run DrawPlus and click Create a Drawing, then Next and A4. Click the Tools menu, select Options, then click the Snapping tab. Set 1 line per cm, tick Display Grid and Snapping and click OK. A grid of small dots will appear on a white canvas. Using the controls at the bottom left, zoom in until the dots are spaced fairly well apart. To complete the exercise, use the dots as a guide.

Click the Line Tools icon – fourth down in the main toolbox on the left – and choose the Curve Line tool. This is DrawPlus's bezier pen.

2 Before starting to draw, click the Line tab in the Studio palette on the right and choose black from the swatches at the top. Below this, set the Line Width to 2.0p.

Click on a grid dot, let go, then move nine dots to the right and click again. You've drawn a straight line. Move one place up and left, and this time click and hold. Drag one place to the left. Two handles emerge from the node, one following your mouse pointer, the other moving symmetrically on the opposite side. The line between the last two nodes is now curved. Release the mouse button.

3 Move two places to the left and one up, then click and drag one place upwards. Let go, then move six places up and click again, this time without dragging. This ends the smooth curve, allowing you to make a corner.

4 Move four places to the right and four places up. Click and drag another four places up, forming a curve.

BEZIER CURVES AT A GLANCE

■ Bezier curves are formed using nodes and handles. These are displayed onscreen, but are invisible in your finished artwork.

■ The line or shape you draw is called a path. To be visible, it needs a stroke with a colour and a width greater than zero.

■ Don't confuse bezier with spline curves, used by a few mainly older programs – they don't work the same way.

5 Without moving, click and let go to draw a straight line up to this position. Then move nine places to the left. Click and let go again to draw the top of the glass.

The left side of the glass will be the mirror image of the right, but since you'll be drawing it in reverse order you'll need to anticipate the curves by adding handles to the preceding nodes. First, move down four places, then click and drag four places downwards.

6 Move four places to the right and click to complete the bowl of the glass. There's no need to drag to add handles to this node, as the handle of the previous node has formed the correct curve.

See if you can continue in the same way and complete the stem. Your last node should be placed on top of the first.

